What is with Customers Buying Behaviour: an Examining Processes of Customers Habit Conducted with Association Rules

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Abstract. Along with the way of information technology development, companies nowadays can easily obtain, save, analyze, and interpret relevant data more significant and even cheaper. To get the understanding of consumer behavior and optimizing sales, a retail company could do everything to achieve their goal. Association Rule is one of the data mining methods that can determine the relationship between two things or analyze the relationship between two items when combined is Association Rule (Mohamad Fauzy1, 2016). In this study, data processing of product sales transactions at retail store R will be carried out as many as 50 customers receipts.The method used is Market Basket Analysis to see the association relationship (correlation) between a few sales attributes. The algorithm is using the Frequent Pattern Growth (FP-Growth) algorithm. This algorithm is used to generate item sets which will later be used to determine association rules. Support, which indicates the frequency of itemset in the dataset. Confidence, measures how strongly two things in a rule are associated. Lift Ratio, measures if a link within a rule is more significant than random chance. The figures presented provide a comprehensive overview of the initial layout of retail store R, as shown in Figure 1, and the corresponding assortment of goods distributed across different departments, as detailed in Figure 2. Following data compilation, there is an essential step in converting this data into binomial form to facilitate further processing and the extraction of valuable insights. Subsequently, sophisticated data analysis techniques, namely the Association Rules method and the FP-Growth algorithm, are applied within the RapidMiner software. This meticulous analysis yields valuable results, as depicted in Figure 3, revealing crucial information and patterns within the retail store's data, thereby assisting in informed decision-making and optimization of the store's operations. RapidMiner is a tool that can completely shows many coefficients needed to explain information contained in the data. Here, coefficients like support, confidence, and lift ratio are results chosen. Support explains how likely a certain relationship between two events occurred, while confidence is a coefficient that bolsters the relationship. This research uses a minimum support value of 0.1 to eliminate weak relationships between events. Events that have a lift ratio that no more than 1 are also being eliminated. Customers unconsciously tend to buy products that has a similar scent, this behavior showed by retail customers generally. From the results obtained, it can be seen that ritel store R does not really have a problem with the layout of items. It can be seen from the results obtained from RapidMiner software that the combination of products purchased, and matched with the existing layout in the retail store. Although some layouts are not close together this is not necessarily a bad thing. Placing products far apart makes it easier for customers walking through other aisles to seeother items.

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